Ergonomy in the new rabbit cages

Recommendations to be addressed to the E.U.

Joan Ruíz Martinez Extrona. Polig. Can Mir 08232 Viladecavalls (Barcelona)
Pablo Villoslada Díaz. Hospital de la Universidad de Navarra Pamplona
Jaume Camps i Rabadà Pg de la Bonanova 92 08017 Barcelona

Summary:

Key words: Ergonomy, rabbits, cages

Ergonomics have been implemented in a natural way and out of common sense in every simple object we use. The same applies to the rabbit cages and design and other materials.

Nevertheless the spectacular change taking place in the last year from 300 does per person exploitations to those of more than 600, and the shifting to investing more time and care in the does cages instead of the time taken by the pits cleansing and feeders filling has prompted to stress the effort on the cages shape and size.

Till 1998 Expoaviga, industrial cages had the nest flooring at approximately half a meter form the row floor. This height forced the breeders to bend their spinal column in excess, in a gesture of closing the shoulders that done hundred of times per day caused irritation and column weakening that could lead to declining processes in the cartilage, vertebra joining and arthritis.

Extrona studies on the ergonomic basis and its appliance to cages lead to the launching of a cage line presented three and a half years ago: slanted opening, double door and bigger single nests…

This writing is based on the interest shown on the appliance of ergonomics to the health and well being of breeders. This is an area in which, though so many studies on rabbits well being have been published, almost nothing has been published related to rabbit breeders.

Moreover we can advance the launching in Expoaviga 2002 of new cages with considerable improvements in Ergonomics, specially, and as an example, we can say they are 20 cm higher and with a nest bottom 15 cm higher than in 1998 to avoid the excessive bending of the breeders' back, a

gesture he repeats hundreds of time per day, avoiding the hazard of bone or back problems

Exposition with brief details about the cages evolution

The Ergonomics is the science about the adaptation of work to men anatomic, physiological and psychological conditions, to obtain the best performance from the binomial man-machine

Ergonomics must be therefore present in the study of any equipment to be used by rabbit breeders. The most important in terms of volume, cost and usage are rabbit cages, specially doe cages. Cages and the rest of rabbit breeding equipment can be considered the machines of the definition. Compared with a textile factory, cages would be the machines, does the thread (renewable elements) and the fattening rabbits the final fabric (the goods you are selling).

Nowadays the number of doe cages handled by a single person is very important and reaches the double of what used to be considered standard five or six years ago. The new handling techniques are quite different from previous ones. Time taking tasks such as manure cleansing, and feeders filling that represented a fair percentage of breeders time a couple of decades ago are today totally automated tasks.

The breeders progressive professionalism has increased the handling efficiency levels, time is now allocated to what really yields a profit, that is the handling of does and their litters.

Down to ergonomics needs, there is a considerable difference between handling a hundred does with nests inside the box, doors difficult to open with two or even three decks, as it was advised at the beginning of the 80's, and the present time situation, in which the number of cages handled per person has been multiplied by six.

We have long forgotten the trend to put cages on a California or battery structure, a system demanding the breeder to bend his back, a kind of tiresome gymnastics with negative future effects and thus not very advisable. Once we know the advantages of the "flat deck" cages started to change gradually. The first change was to put the door not on the front but on the top of the cage, a change that required a lowering of the legs height now the cage was handled from the upper part. Another change was to put the nest outside, a modification that improved the litter handling, nevertheless space was lost and the doe cages had to be exclusively used for mothers with nest.

On recent times it has been a move towards polyvalent cages for a better adaptation to volume needs and row handling

Due to welfare regulations all the cages have a nest bottom in between 450 and 500 mm flooring, consequently the majority of breeders, besides taller than before, need to bend their back to reach the cage bottom lay the nest, take it out and cater for the young rabbits, in fact highly important and frequent tasks.

Pathologies stemming from bad body positions

Nowadays we cannot see those malformations caused by the everyday effort of certain jobs. Up to the 50's, and crystal clear on the Middle Ages, it was possible to know everybody job by their back, shoulders, hands and legs shape. Those days are over but one can still find a great number of injuries that can show up sooner or later and are caused by the strain put on certain specific points, the most common point for this strain is the spinal column. As an example even on a job that can be seen as effort free, there even needs to be a control on the kind of chairs used by people working on offices, since a faulty design can cause column trouble.

The exercise done by the hundreds of times the breeders put their hands down to the nest bottom and the hundreds of cages they have to cater for, means bending the back forward in between 30 and 50 cm , quite frequently the breeder needs to close his shoulders to get both hands through the door, putting an additional stress on the back. The most important bending is on the lower back, not to be forgotten the rest of column joining, the knees forward movement and the foot effort to hold the balance

This body gestures done all through the day can cause irritation, column weakening and could lead to declining processes on the cartilage and vertebra joining. Frequently this processes end on arthritis even during labour years but are specially problematic and painful on retirement years.

The attached picture represents the body position adopted by a person 1,70 to 1, 75 tall to reach the nest bottom on the cages used before 1998.

Any improvement to be implemented, that can be labelled as Applied Ergonomics, will be for the breeders comfort and in some cases even for their health benefit.

New Ergonomic cages

From 1998 onwards cages have been designed, taking into account ergonomics, with a slanted opening to lower the cage access door. The wider openings, represent a key change, there even can be double to allow two options, opening the nest area, the commonest option, or the whole cage to gain access to the cage bottom. This change has allowed the cages to be slightly longer, from 90 cm to 1 meter, this length increase permits a slight reduction on the cages width. This means that keeping the same square centimetres required by law to guarantee comfort standards we can reduce the rows length allowing us to place more cages on the same space.

This double door makes easier the task of removing the litter once rabbits have reached their slaughterhouse weight. The nest has also been modified from the already known plastic box to a easier handling and cleaning pail. (Cages first shown at Expoaviga 1998 Fair under the Formula 1 name by the company EXTRONA)

All these details are already known by the majority of rabbit breeders since 3 years and a half ago and have been adapted by other European manufacturers. Nevertheless there was a need to implement further away this ergonomic improvements, dozens of small details such as nest height that the Extrona company will show on Expoaviga 2002.

The nest height is basic to avoid the problematic column bending but has one handicap: custom,also the general rows vision that on average is around 80 cm high. We understand that to rise the top 20 has a visual and aesthetic impact at first sight, above all when its advantages are not thoroughly assessed.

The main objective of this writing is to stress the idea of the many benefits ergonomics have when applied to rabbit cages: makes handling much easier and prevents the appearance of pathological problems.

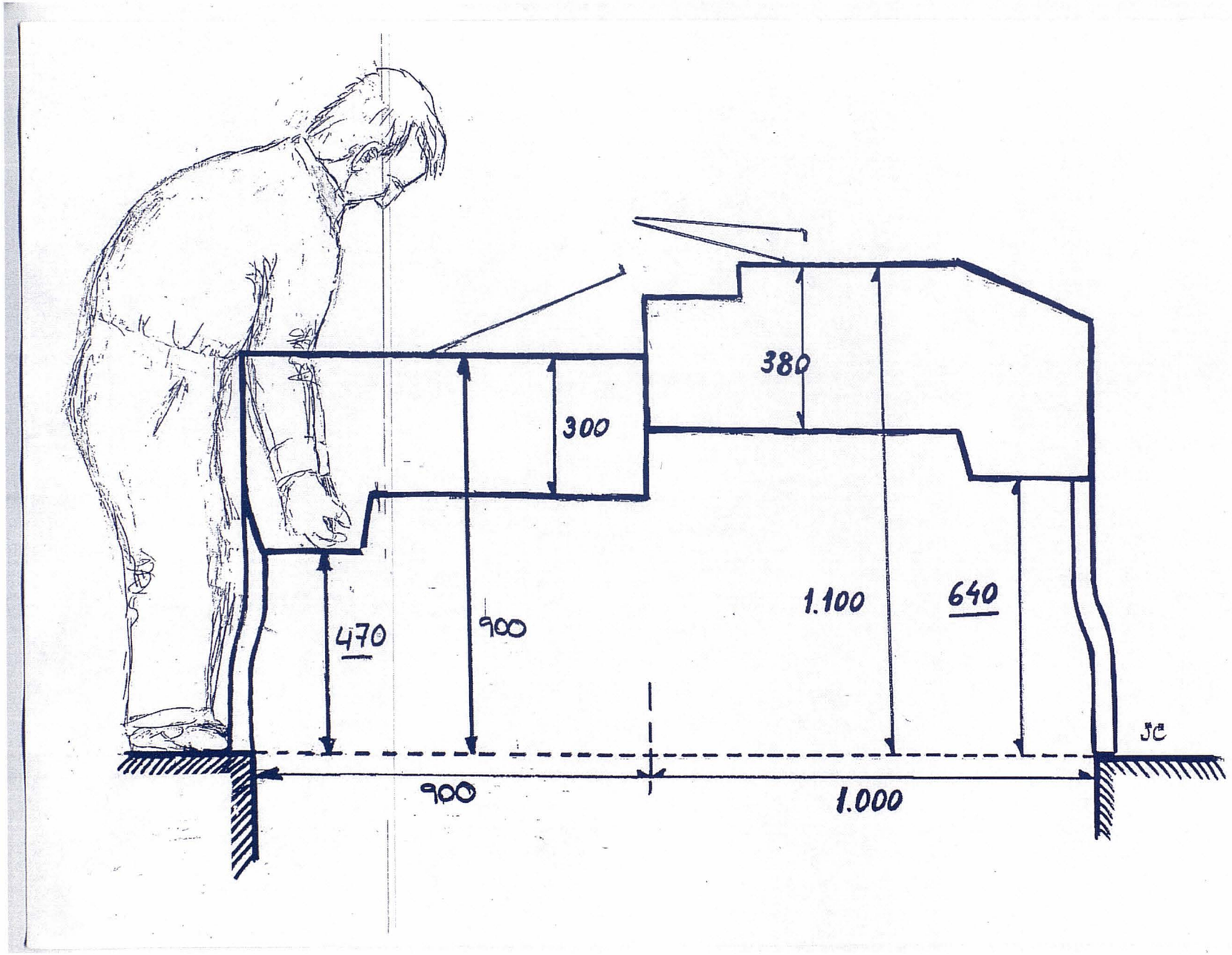
Ergonomics is the slanted cage shape to facilitate the litter vision inside and outside the nest, and avoid excessive bending of the breeders' column, ergonomics is as well the wide cages opening doors and other details being on trial phase. Lastly and since it has already been checked, the idea of presenting the ergonomic data of the 640mm bottom nest height from the row floor, that means a difference in between 120 and 170 from the cages present in the market before the Euro Plus model 1998 launching.

Applied Ergonomics definition on nest position

The attached picture shows at the same scale three years ago cages and the new model to be launched on which we stress heights. From the ceiling at 1,1 meter instead of 90, from the space in between cage bottom and ceiling, augmented from 300 to 380, following UE first proposals, and **most important of all the distance from the row bottom on which the breeder stands to the nest bottom, now at 640 mm instead of the former 470**.

It cannot be denied that manufacturers adapt their cages legs measures to the breeders demands either by rising this height or even lowering it, since easy handling is already in their minds. Not leaving this customer service characteristic, these new heights measures coming form ergonomics studies will be advised, data non existing before.

We have found no reference to studies on the ergonomic optimum height for the nest or any measure, shapes or materials to be used to improve breeders comfort and spare them the referred column problems. No data is shown on any of the oral expositions or proceedings of the seven WRSA World Congresses and there seems to be no reference of any official proposal in this area when this issue is of great importance to people working with rabbits. On the contrary there are a lot of writings on animal comfort (always welcomed) in which one can found multitude of details on cages measures and strict measures are being studied to be implemented on all the U.E countries.


380
300
470
900
1.100
640
900
1.000